REMARKS

The present application relates to inbred maize plant and seed PH3PV. Claims 1-30 are pending in the present application. Claims 2, 19-22, 25-28, and 30 have been amended. Claim 16 has been canceled. No new matter has been added by way of amendment. Applicant respectfully requests consideration of the claims in view of the following remarks.

Detailed Action

Applicant has amended the specification to include the U.S. Patent No. of the parent application on page 1, lines 9-11 as requested by the Examiner. No new matter has been added.

Applicant further acknowledges that a proper form 1449 Information Disclosure

Statement (IDS) is being submitted herein as requested by the Examiner.

Claim Objections

The Examiner states that "should claims 2 and 3 be found allowable, claims 5 and 6 will be objected to under 37 C.F.R. § 1.75 as being a substantial duplicate thereof". See Office Action, pp. 2-3.

Applicant respectfully traverses this objection. The scope of the claims in claims 2-3 and 5-6 are not the same. Claims 2 and 3 are to a maize plant or maize plant part from the seed having been deposited under ATCC Accession No. PTA-4580. In contrast, claims 5 and 6 are to a maize plant or maize plant part of an F1 hybrid maize seed crossed with a different maize plant. Further, Applicant assert claims 2-3 and 5-6 are in proper dependent form as taught in MPEP § 608.01(n) and 37 C.F.R. § 1.75(c). Moreover, Applicant are aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claims 2-3 and 5-6, were in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this objection be alleviated in light of the above statements.

Double Patenting

The Examiner rejects claims 1-6, 11-18, 23, 24, 28 and 29 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of

copending U.S. Patent No. 6,737,566. The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other. See Office Action, pp. 3-5.

Applicant is herein submitting a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c), which disclaims any term of a patent issuing from this application which would extend beyond the term of copending U.S. Patent No. 6,737,566.

The Examiner further rejects claims 19-22 and 25-27 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of copending U.S. Patent No. 6,737,566 in view of Larkins (U.S. Patent No. 6,232,535). The Examiner states that although the conflicting claims are not identical, they are not patentably distinct from each other. See Office Action, pp. 5-7.

Applicant is herein submitting a Terminal Disclaimer in compliance with 37 C.F.R. § 1.321(c), which disclaims any term of a patent issuing from this application which would extend beyond the term of copending U.S. Patent No. 6,737,566 in view of Larkins (U.S. Patent No. 6,232,535).

Therefore, Applicant submits that the claims are in proper form for allowance and respectfully request reconsideration and withdrawal of the nonstatutory obviousness-type double patenting rejections.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 2, 3, 20, 22, and 28-30 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. See Office Action, pp. 7-8.

The Examiner states that claim 2 is indefinite in the recitation "F1 hybrid maize seed" and that "[t]here is insufficient antecedent basis for the recitation." Although not acceding to the Examiner's rejection, in an effort to reduce the issues on appeal, Applicants have now amended claim 2 to replace the article "an" with the article "the", thus alleviating this rejection.

Claim 20 is indefinite according to the Examiner for "the article 'a' in the recitation, 'the single locus was stably inserted into a maize genome by transformation". Although not acceding to the Examiner's rejection, in an effort to reduce the issues on appeal, Applicants have now amended claim 20 to replace the article "a" with the article "the", thus alleviating this rejection.

The Examiner states that claim 22 is indefinite in the recitation "yield enhancement" and "improved nutritional quality". Applicant respectfully traverses. "Yield Advantage" is defined on page 15 of the specification as "the yield advantage of variety #1 over variety #2". Therefore yield enhancement would be the improvement of the trait yield over another variety. Applicant asserts that genes which increase yield by increasing the plants resistance to disease, herbicides, or insects are within the scope of the claims as presented. The specification teaches multiple ways of introgressing or transforming a maize plant with various genes which confer advantageous traits desired in the plant. See specification, pp. 22-35. The specification also teaches many transgenes that could be inserted into the plant of claim 11. See specification, pp. 28-33. In addition, see U.S. Patent No. 5,936,145, issued August 10, 1999, which is prior to the filling date of the instant application. Claim 39 reads as follows: "[t]he single gene conversion of the corn plant of claim 29, where the gene confers enhanced yield stability." Thus, a single gene that confers enhanced yield stability was known in the art prior to the filling date of the instant application. One of skill in the art would recognize that it is common to transform a maize plant with various genes in order to confer desired traits to the maize plant.

Similarly, "improved nutritional quality" would represent an improvement in the nutritional quality versus another variety as described on page 21 of the specification. Further, single genes that affect nutritional quality are known in the art. Specifically genes for modified fatty acids, decreased phytate content and modified carbohydrate compositions which are disclosed in the specification on pp. 32-33. Applicant respectfully submits that one skilled in the art would thus recognize that claim 22 is adequately defined.

Claim 28 is indefinite "as the preamble of the claim indicates that the method is for developing a maize plant breeding program using plant breeding techniques...the claim does not indicate when the maize plant is developed". Applicant traverses this rejection. Applicant has obtained allowance from the Supervisory Patent Examiner, Anne Marie Grunberg, regarding claim 28 as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicant is aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 28, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this rejection be alleviated in light of the above statements.

In light of the above amendments and remarks, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

Rejections Under 35 U.S.C. § 112, First Paragraph

A. Written description regarding Claim 16

Claim 16 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claims(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states "the claim is broadly drawn towards any maize seed produced by growing a hybrid maize plant, wherein the hybrid maize plant was produced by crossing a maize plant having all the morphological and physiological characteristics of maize plant PH3PV with a second maize plant". See Office Action, pp. 8-9.

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution and reduce the issues upon appeal, Applicant has now canceled claim 16, thereby alleviating this rejection.

B. Written description regarding Claims 7-10, 19-22, 25 and 30

Claims 7-10, 19-22, 25 and 30 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claims(s) contains subject matter, which was not described in the specification in such a way as reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See Office Action, pp. 9-10.

The Examiner states that claim 7 is "drawn to an inbred maize plant cell of inbred maize line PH3PV...there is no written description support for such a seed, or plant produced therefrom, in the specification".

Applicant traverses this rejection. Applicant asserts there is adequate written description in the specification for "an inbred maize plant cell" on pages 21-22 of the specification:

As used herein, the term plant includes plant cells, plant protoplasts, plant cell tissue cultures from which maize plants can be regenerated, plant cells, plant clumps, and plant cells that are intact in plants or parts of plants, such as embryos,

pollen, ovules, seeds, flowers, kernels, ears, cobs, leaves, husks, stalks, roots, root tips, anthers, silk and the like. Specification, p. 22.

Applicant asserts that the use of this terminology would be well understood to one ordinarily skilled in the art. In addition, Applicant is aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 7, were in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this rejection be alleviated in light of the above statements.

The Examiner goes on to state that claim 19 lacks written description support for "single locus conversion". Although not acceding to the Examiner's rejection, in an effort to expedite prosecution, Applicant has amended claims 19-22 to read "single gene conversion", as supported in the specification on page 21, further defining the claims. Applicant further submits that the terms "single gene conversion" and "single locus conversion" are synonymous and would be well understood by one of ordinary skill in the art. Applicant respectfully submits that one skilled in the art would thus recognize that Applicant has adequately described claim 19.

The Examiner states that claim 25 "does not have support for '0-5 generations'".

Applicant traverses this rejection. Applicant asserts the specification provides adequate written description for the claimed language:

Pedigree breeding starts with the crossing of two genotypes, each of which may have one or more desirable characteristics that is lacking in the other or which complements the other. If the two original parents do not provide all the desired characteristics, other sources can be included in the breeding population. In the pedigree method, superior plants are selfed and selected in successive generations. In the succeeding generations the heterozygous condition gives way to homogeneous lines as a result of self-pollination and selection. Typically in the pedigree method of breeding five or more generations of selfing and selection is practiced: $F_1 \rightarrow F_2$; $F_2 \rightarrow F_3$, $F_3 \rightarrow F_4$; $F_4 \rightarrow F_5$, etc. Specification, p. 4.

It is also important to note that after five or more backcross generations with selection for the desired trait, the progeny will be homozygous for loci controlling the characteristic being transferred, but will be like the superior parent. See specification, p. 4. Applicant respectfully submits that one skilled in art would recognize that Applicant has adequately described claim 25.

Furthermore, in an effort to expedite prosecution Applicant has amended claim 25 in a manner which has obtained allowance from the Supervisory Patent Examiner, Anne Marie

Grunberg, as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicant is aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 25, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this rejection be alleviated in light of the above statements.

The Examiner further states that claims "there is no support for step (c) of claim 30.

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution,
Applicant has amended claim 30 in a manner which has obtained allowance from the
Supervisory Patent Examiner, Anne Marie Grunberg, as has been evidenced in analogous
allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Moreover, Applicant is
aware that in view of a meeting with the Group Director in July 2006, the Examiner's were
informed that the present claim set, including claim 30, was in proper form and would be
allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc.

One skilled in the art would thus recognize that Applicant has fully described and fully satisfied the legal standards of written description for claims 7-10, 19-22, 25 and 30 as of the filing date of the application. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the written description rejections under 35 U.S.C. §112, first paragraph.

inbred continuation cases. Thus, Applicant respectfully requests this rejection be alleviated in

C. Enablement regarding Claims 7-10

light of the amendment and the above statements.

Claims 7-10 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. See Office Action, pp. 10-11.

The Examiner states that claim 7 is not enabled. Applicant traverses this rejection. Applicant asserts that claim 7 is adequately described and further enabled as evidenced by the statements described supra. Further, Applicant is aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claim 7, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this rejection be alleviated in light of the above statements

Applicant further asserts that dependent claims 8-10 are also adequately described and enabled. The Examiner does not provide explanation as to why these claims are not enabled. Nevertheless, Applicant maintains the arguments described *supra* also apply to dependent claims 8-10. Moreover, Applicant is aware that in view of a meeting with the Group Director in July 2006, the Examiner's were informed that the present claim set, including claims 8-10, was in proper form and would be allowable as has been evidenced in analogous allowed and issued Pioneer Hi-Bred Int'l, Inc. inbred continuation cases. Applicant respectfully requests this rejection be alleviated in light of the above statements.

Accordingly, Applicant submits that claims 7-10 are fully enabled and have fully satisfied the legal standards for enablement. Applicant respectfully requests reconsideration and withdrawal of the enablement rejections under 35 U.S.C. § 112, first paragraph.

Rejections Under 35 U.S.C. §§ 102(b)/103(a)

Claim 16 is rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Johnson (U.S. Patent No. 5,859,355). The Examiner states that "seed may have been produced from a method different from those of the instantly claimed seed. However the instantly claimed products do not appear to differ from the products taught by the reference". See Office Action, pp. 11-12.

Although not acceding to the Examiner's rejection, in an effort to expedite prosecution, claim 16 has been canceled, thus alleviating this rejection. Applicant respectfully requests the Examiner withdraw the rejections to claim 16 under 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a) as obvious over Johnson (U.S. Patent No. 5.859.355).

Request for Information under 37 C.F.R. § 1.105

The Examiner has made a Request for Information under 37 C.F.R. § 1.105. The Examiner states the requested information is "required to make a meaningful and complete search of the prior art". See Office Action—Request for Information Under 37 C.F.R. § 1.105, pp. 14-16.

Applicant provides answers to each of the Examiner's interrogatories discussed *infra*.

The Examiner begins by asking firstly, what were the original parental maize lines used to produce maize inbred line PH3PV? Please supply information pertaining to the lineage of the

original parental lines back to any publicly available varieties. PHTD5 and PHTE7. Information pertaining to the lineage of the original parental lines is available within the PVP Application No. 200100251, attached as Appendix 1.

Secondly, what method and steps were used to produce maize inbred line PH3PV? Pedigree selection method produced by selfing and selection for 7 generations.

Third, have any of said parental maize lines or progeny therefrom been disclosed or made publicly available?

- a. The parental maize line PHTD5 was previously disclosed or made publicly available in PVP Certificate No. 9400095 and U.S. Patent No. 5,527,986. The parental maize line PHTE7 was previously disclosed or made publicly available in PVP Certificate No. 9500215.
- No other progeny of the parental cross PHTD5/PHTE7 was previously publicly disclosed or made publicly available by Applicant prior to the earliest priority date.

Fourth, were any other maize lines produced by said method using said original parental maize lines, and if so, have said produced maize lines been publicly available or disclosed? If so, under what designation/denomination and under what conditions were said other maize lines disclosed or made publicly available? No other maize line using the same F1 cross has been produced by said method using said original parental maize lines at or before the time of filing of the instant application.

In light of the above remarks, Applicant respectfully requests reconsideration and compliance with the interrogatories under the Request for Information under 37 C.F.R. § 1.105.

Conclusion

In conclusion, Applicant submits in light of the above amendments and remarks, the claims as amended are in a condition for allowance, and reconsideration is respectfully requested. If it is felt that it would aid in prosecution, the Examiner is invited to contact the undersigned at the number indicated to discuss any outstanding issues.

Please consider this a two month extension of time from December 7, 2006 to February 7, 2007, under the provision of 37 C.F.R. § 1.136(a) and charge Deposit Account No. 26-0084 for the amount of \$450.00. No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any fees inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Reconsideration and allowance is respectfully requested.

Respectfully submitted,

ROBERT A. HODGSON, Reg. No. 56,375 McKEE, VOORHEES & SEASE, P.L.C.

801 Grand Avenue, Suite 3200 Des Moines, Iowa 50309-2721

Phone No: (515) 288-3667 Fax No: (515) 288-1338 CUSTOMER NO: 27142

- RAH/LATA/bjh -

Attorneys of Record

THIE UNITED STATES OF AMIERICA

TO ALL TOWHOM THESE: PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

THE PAS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANTIS INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANTIS IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE DATE SEED OF THE VARIETY IN A PUBLIC REPOSITIOR AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS. FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN COUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY TRECTION ACT. (AS STAT. 1542, AS AMENDED, TUSC. 2221 ET 550.)

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30 Testimon Mirerest, I have hereunto set my hand and caused the seal of the Mant Barieta Presection of the seal of the Mant Barieta D.C. this twenty third day of May,

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Secretary of Agriculture

APPENDIX 1

Plant Variety Protection Office

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INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety protection Office PVPDA, LLL of the following items must be received in the PVPDC: (1) Completed application from agend by the newer; (2) completed Exhibit A, B, C, E; (3) for a seed reproduced variety at least 2,500 value unbrased seeds of see higher to exhibit A and the produced he wavely. Or other reproduced variety at least 2,500 value unbrased seeds of see higher to exhibit A and the produced he variety. Or other reproduced variety at real 2,500 for pository; (4) check drawn on a U.S. bank for \$2,000 applications value for the produced pro

Plant Variety Protection Office Telephone: (301)504-5518 FAX: (301)504-5291

Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

- Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
 (2) the details of subsequent stages of selection and multiplication;
 (3) evidence of uniformly and stability, and
 - - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified.
- Give a summary of the variety's distinctness: Clearly state how this application variety may be destinguished from all other varieties in this state; or all, the new varieties are varieties and state one varieties are varieties and state and differences operating and applications of the varieties are clear and inferences operating and other varieties are clear and inferences operating and other varieties are clear and increase operating and other varieties are clear and increase are clear and increase and other varieties are clear and increase are clear and increase and other varieties are clear and increase are clear and part comparisons which clearly indicate districtness.
- Exhibit C forms are available from the PVPO for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety. 180
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant disease
- 18e. Section 52(5) of the Act required applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
- 19 If "Yes" is specified (seed of this variety be sold by variety name only, as a class of certified seed), the applicant may NOT reverse this affirmative decision after the variety has been soid and so labeled, the decision published, or his certificate issued. However, If "Not has been specified, applicant may change the choice, (See Regulations and Rules of Practice, Section 7.103).
- See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
- See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date
- CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

11/01/2000 United States and Canada

CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual properly right (Plant Breeder's Right or Patent).

NOTES II. In the expectability of the applicationness in large the Prior Informed diary presspec of editions or daining of conversibly or assignment or conversible conversibl

To avoid conflict with other variety names in use, the applicant should check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089.

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Exhibit A. Origin and Breeding History

Pedigree: PHTD5/PHTE7)XA53112X

Pioneer Line PH3PV, Zea mays L., a dent corn inbred, was developed by Pioneer Hi-Bred International, Inc. from the single cross hybrid PHTD5 (Certificate No. 9500215) using the pedigree method of plant breeding. Varieties PHTD5 and PHTP3 are proprietary inbred lines of Pioneer His Bred International, Inc. Selfing was practiced from the above hybrid for 7 generations using pedigree selection. During line development, crosses were made to inbred testers for the purpose of estimating the line's combining ability. Yield trials were grown at Moorhead, Minnesota as well as other Pioneer research locations. After initial testing, additional hybrid combinations have been evaluated and subsequent generations of the line have been grown and hand-pollinated with observations again made for uniformity.

Variety PH3PV has shown uniformity and stability for all traits as described in Exhibit C - "Objective Description of Variety". It has been self-pollinated and ear-rowed 5 generations with careful attention paid to selection criteria and uniformity of plant type to assure genetic homozygousity and phenotypic stability. The line has been increased both by hand and in isolated fields with continued observations for uniformity and stability, and for 3 generations during the final stages of inbred development and seed multiplication. Very high standards for genetic purity have been established morphologically using field observations and electrophoretically using sound lab molecular marker methodology.

No variant traits have been observed or are expected in PH3PV.

The criteria used in the selection of PH3PV were yield, both per se and in hybrid combinations; late season plant health, grain quality, stalk lodging resistance, and kemel size, especially important in production. Other selection criteria include: ability to germinate in adverse conditions; number of illense, sepecially important in production because having numerous tillers increases hybrid production costs spent on detasseling; disease and insect resistance, poller wield and tassel size.

Exhibit A: Developmental history for PH3PV

Season/Year Pedigree Grown	Inbreeding Level of Pedigree Grown
SUMMER/1991:	
PHTD5, PHTE7	F0
WINTER/1992:	
PHTD5/PHTE7	F1
SUMMER/1993:	
PHTD5/PHTE7)X	F2
SUMMER/1994:	
PHTD5/PHTE7)XA5	F3
WINTER/1995:	
PHTD5/PHTE7)XA53	F4
SUMMER/1996:	
PHTD5/PHTE7)XA531	F5
WINTER/1996:	
PHTD5/PHTE7)XA5311	F6
SUMMER/1997:	
PHTD5/PHTE7)XA53112	F7
Seed:	
PHTD5/PHTE7)XA53112X	F8

*PH3PV was selfed and ear-rowed from F3 through F7 generation.
#Uniformity and stability were established from F5 through F8 generation and beyond when seed supplies were increased.

Exhibit B. Novelty Statement

Variety PHIPV mostly resembles Pioneer Hi-Bred International, Inc. proprietary inbred line PHITDS (PVP Certificate No. 9400095). Husk tightness and shank position scores were collected primarily in Johnston, Ankeny, and Dallas Center, IA.

Variety PH3PV has a higher shank position score (3 vs 1) than PHTD5 (Shank position scores 1-3 where 1 =upright and 3 =drooping or pendulum position).

Variety PH3PV has a higher husk tightness score (5 vs 3) than PHTD5 (1-9 scale where I =very loose husk and 9 =very tight husk).

United States Department of Agriculture, Agricultural Marketing Service Science Division, Plant Variety Protection Office National Agricultural Library Building, Room 500 Beltsville, MD 20705

Objective Description of Variety Corn (Zea mays L.)

Name of Applicant (s) Pioneer Hi-Bred International, Inc.		Vari	ety Name or Temporary Designation PH3PV
Address (Street & No., or RFD No., City, State, 2	in Code and Country	FOR OFFICIAL USE	
7301 NW 62sd Avenue, P.O. Box 85.		POR OFFICIAL USE	
Johnston, Iowa 50131-0085 Place the appropriate number that describes the v Leading zeroes if necessary. Completeness shou		PVP0 Number	4 4 1
Necessary for an adequate variety description and COLOR CHOICES (Use in conjunction with Mu Oil—Light Green Os—Pale Vellow 02—Medium Green 03—Park Green 04—Verlow Orange 04—Very Dark Green 09—Salmon 10=Phik-Orange	isell color code to describe all color choi: 11=Pink 12=Light Red 13=Cherry Red 14=Red 15=Red & White	es: describe #25 and #26 16=Pale Purple 17=Purple 18=Colorless 19=White 20=White Capped	21=Buff 22=Tast 23=Brown 24=Bronze 25=Varingated (Describe)
STANDARD INBRED CHOICES			26=Other (Describe)
Use the most similar (in background and maturity cllow Dent Families:	 of these to make comparisons based on 	grow-out trial data):	
Family Members 314 CM105, A632, B64, B68	Yellow Dent (Unrelated) Co109, ND246, Oh7, T232,	Sweet C	Corn: owa5125, P39, 2132
337 B37, B76, H84 373 N192, A679, B73, NC268 2103 Mo17, Va102, Va35, A682	W117, W153R, W18BN	Popearn SG153	i: . 3, 4722, HP301, HP7211
0h43 A619, MS71, H99, Va26 WF9 W64A, A554, A654, Pa91	White Deat: C166, H105, Ky228	Pipecorr	1: V, Mol 6W, Mo24W

1. TYPE:	describe intermediate types in Comments so	ction):			Stand	ard Varie	ty Nam
2	1=Sweet 2=Dent 3=Flint 4=Flour 5=Pop 6	⇒Omamental				A554	
2. REGIO	N WHERE DEVELOPED IN THE U.S.A.:				Stand	ard Seed	Source
	=Northwest 2=Northcentral 3=Northeast 4:	Southeast 5=Sou	thcentral		1		
	=Southwest 7=Other					AMES 19	1305
	RITY (In Region of Best Adaptability; show H	eat Unit formula in	'Comments' s	ection)			
	HEAT UNITS				DAYS	HEAT U	NITS
	1.211.0 From emergence to 50% of plant				065	1,200.3	
	1.246.3 From emergence to 50% of plant	s in pollen			065	1,202.7	
005	0.097.7 From 10% to 90% pollen shed				004	0.092.0	
	From 50% silk to optimum edible				1		
	From 50% slik to harvest at 25%	moisture			1		
4. PLANT			Standard	Sample		Standard	Samp
			Deviation	Size		Deviation	Siz
178,7	cm Plant Height (to tassel tip)		04.93	03	175.3	08.14	03
	cm Ear Height (to base of top ear node)		04.93	03	060.3	06.66	03
	om Length of Top Ear Internode		01.01	03	013.0	01.25	03
0.0	Average Number of Titlers		00.01	03	0.0	00.00	03
	Average Number of Ears per Stalk		00.06	03	0.9	00.08	03
3	Anthocyanin of Brace Roots: 1=Absent 2=	aint 3=Moderate	4=Dark 5=Ve	ery Dark	3		
5. LEAF:			Standard	Sample		Standard	Sampl
			Deviation	Size	1 (Deviation	Size
	om Width of Ear Node Leaf		00.20	03	08.9	00.23	03
	om Length of Ear Node Leaf		03.47	03	66.7	02.64	03
	Number of leaves above top ear		00.12	03	05	00.64	03
27.	Degrees Leaf Angle (measure from 2nd leaf at anthesis to stalk above leaf)	above ear	01.03	03	23	04.28	03
03	Leaf Color (Munseil code)	5GY34			03	5G)	rás
1	Leaf Sheath Pubescence (Rate on scale from	1=none to 9=like	peach fuzz)		1		1
	Marginal Waves (Rate on scale from 1=none	to 9=many)			_		
	Longitudinal Creases (Rate on scale from 1=	none to 9=many)-			l		
6. TASSE			Standard	Sample		Standard	Sampl
			Deviation	Size		Deviation	Size
	Number of Primary Lateral Branches		01.33	03	12	00.70	03
	Branch Angle from Central Spike		07.29	03	23	08.21	03
	om Tassel Length (from top leaf collar to tass		01.15	03	48.3	04.02	03
	Pollen Shed (rate on scale from 0=male steril)		8		
	Anther Color (Munsell code) 105				07	5Y	eie .
	Glurne Color (Munseil code) 7.55				01	5G)	œ
1	Bar Glumes (Glume Bands): 1=Absent 2=Pr	sent			1		
Annianta	Variety Data	Page 1				Marlah	

	Variety Data PH3PV Page 2 (Unhusked Data):			Standard Varie	y Data
					,
	Silk Color (3 days after emergence) (Munseil code)		10RP48	11 10RI	256
_	Fresh Husk Color (25 days after 50% silking) (Munsell		5GY76	01 5GY	78
	Dry Husk Color (65 days after 50% sliking) (Munsell co		5Y92	21 2.5Y	3.54
	Position of Ear at Dry Husk Stage: 1= Upright 2= Horiz		,	3	
_	Husk Tightness (Rate of Scale from 1=very loose to 9=			6	
2	Husk Extension (at harvest): 1=Short (ears exposed) 2			2	
	3=Long (8-10 cm beyond ear tip) 4=Very Long (>10 cm)	_		
7b. EAR	(Husked Ear Data):	Standard	Sample	Standard	Sampl
		Deviation	Size	Deviation	Size
11.7	cm Ear Length	00,58	03	08.7 00.58	03
37.0	mm Ear Diameter at mid-point	. 01.00	03	37.7 01.15	03
076.3	gm Ear Weight	04.51	93	54.3 07.51	03
14	Number of Kernel Rows	00.00	03	14.0 00.00	03
2	Kemel Rows: 1=Indistinct 2=Distinct			2	
2	Row Alignment: 1=Straight 2=Slightly Curved 3=Spiral			2	
10.7	cm Shank Length	02.89	03	05.7 01.53	03
2	Ear Taper: 1=Slight 2= Average 3=Extreme			2	
B. KERNE	EL (Dried)	Standard	Sample	Standard	Sampl
		Deviation	Size	Deviation	Size
10.3	mm Kernel Length	00.58	03	09.3 00.58	03
08.0	mm Kemel Width	00.00	03	07.3 00.58	03
04.7	mm Kernel Thickness	00.58	03	04.0 00.00	03
27.0	% Round Kernels (Shape Grade)	12.00	03	72.7 10.21	03
1	Aleurone Color Pattern: 1-Homozygous 2=Segregating			1	
07	Aluerone Color (Munsell code)	1.2	5Y816	97 2.5YR	712
<u>07</u>	Hard Endosperm Color (Munsell code)	10	R714	07. 10YR	712
03	Endosperm Type:		,	3	1
	1=Sweet (Su1) 2=Extra Sweet (sh2) 3=Normal Starc 4=High Amylose Starch 5=Waxy Starch 6=High Prol 7=High Lysine 8=Super Sweet (se) 9=High Oil 10=Other				
26.3	gm Weight per 100 Kemels (unsized sample)	01,15	03	16.67 02.89	03
. COB:		Standard	Sample	Standard	Sample
		Deviation	Size	Deviation	Size
21.7	mm Cob Diameter at mid-point	01.53	03	21.0 00.00	03
	Cob Color (Munsell code) 10R4	i.		14 10R	.1.

Application Variety Data

0---

Standard Variety Data

5

<u>3</u>

10. DISEASE RESISTANCE (Rate from 1 (most susceptible) to 9 (most resistant); leave blank if not tested; leave Race or Strain Options blank if polygenic):

A. Leaf Blights, Wilts, and Local Infection Diseases

- Anthracnose Leaf Blight (Colletotrichum graminicola)
- 6 Common Rust (Puccinia sorghi) Common Smut (Ustilago maydis)
- Eyespot (Kabatiella zeae) 5 Goss's Wilt (Clavibacter michiganense spp. nebraskense)
- Gray Leaf Spot (Cercospora zeae-maydis) Helminthosporium Leaf Spot (Bipolaris zeicola) Race ----
- 5 Northern Leaf Blight (Exserohilum turcicum) Race —— Southern Leaf Blight (Bipolaris maydis)
- Race ----Southern Rust (Puccinia polysora)
- § Stewart's Wilt (Erwinia stewartii) Other (Specify) -----

B. Systemic Diseases

- Corn Lethal Necrosis (MCMV and MDMV)
- 4 Head Smut (Sphacelotheca reiliana) Malze Chlorotic Dwarf Virus (MDV) Maize Chlorotic Mottle Virus (MCMV) Maize Dwarf Mosaic Virus (MDMV)
 - Sorghum Downy Mildew of Com (Peronosclerospora sorghi) Other (Specify) ----

C. Stalk Rots

Anthracnose Stalk Rot (Colletotrichum graminicola) Diplodia Stalk Rot (Stenocarpella maydis) Fusarium Stalk Rot (Fusarium moniliforme) Gibberella Stalk Rot (Gibberella zeae) Other (Specify) ----

D. Ear and Kernel Rots

Other (Specify)

- Aspergillus Ear and Kernel Rot (Aspergillus flavus) Diplodia Ear Rot (Stenocarpella maydis)
- Fusarium Ear and Kernel Rot (Fusarium moniliforme) 2 Gibberella Ear Rot (Gibberella zeae)

Application Variety Data

Standard Variety Data

CLARIFICATION OF DATA IN EXHIBITS B AND C

Please note the data presented in Exhibit C, "Objective Description of Variety," are collected primarily at Johnston and Ankery, Iowa. The data in Exhibit B are from comparisons of inbreds grown in the same tests in the adapted growing area of PH3DY and in Johnston and Ankery, IA. The data in Tables IA and IB are from adifferences between the two varieties.

The data collected in exhibit C was collected in 2000 for page 1 and 2. There were 3 different planting dates planted for these trials. There are environmental factors that differ from planting date to planting date. Environmental temperature and precipitation differences during the vegetative and grain fill periods can impact plant and grain stuits, and are a source of variability. The environmental conditions described above could result in larger standard deviations. The variation associated with environment to environment is normally higher than the variation associated within locations. I have enclosed a table that shows some of the temperature and precipitation values in

Exhibit D. Temperature and Precipitation differences from Ankeny, IA

TEMPERATURE

YEAR	MAY	JUN	JULY	AUG	AVERAGE
1994	5 9.8	70.7	71.9	69.0	67.9
1995	56.2	69.4	74.3	76.9	69.2
1996	56.2	69.3	71.3	70.5	66.8
1997	53.5	70.6	74.1	69.6	67.0
1998	64.7	66.6	74.8	73.5	69.9
1999	60.7	69.7	78.7	70.5	69.9
2000	63.5	68.9	73.2	74.2	70.0

RAINFALL

YEAR	MAY	JUN	JULY	AUG	Total
1994	3.67	5.75	1.71	4.18	15.31
1995	5.04	4.19	2.94	2.87	15.04
1996	8.47	4.35	2.51	2.14	17.47
1997	4.32	3.27	4.10	1.36	13.05
1998	6.46	11.07	5.70	4.96	28.19
1999	6.46	4.54	4.45	6.55	21.85
2000	5.40	5.80	3.16	1.78	16.14

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EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP	Application is required in order to deten certificate is to be issued (7 U.S.C. 2421). until certificate is issued (7 U.S.C. 2426).	mine if a plant variety protection Information is held confidential
NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
PIONEER HI-BRED INTERNATIONAL, INC.	OR EXPERIMENTAL NUMBER	PH3PV
4 ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (include area code)
7301 NW 62 nd AVENUE P.O.BOX 85	515-270-4051	515-253-212
JOHNSTON, IA 50131-0085	7. PVPO NUMBER	-051
		□ NO
		□ NO
Is the applicant (inclividual or company) a U.S. national or U.S. based company Wine, give name of country		□ №
Is the applicant (inclividual or company) a U.S. national or U.S. based company If no, give name of country 10. is the applicant the original content? YES	y? ☑ YES ☐ NO	□NO
. Is the applicant (individual or company) a U.S. national or U.S. based compared to the company of the company	y? ☑ YES ☐ NO	□ NO
Description (individual or company) a U.S. national or U.S. based company. If no, give name of country. If no, give name of country a. If original rights to variety were owned by individual(s), isleen) the original VES. NO If no, give name of country.	y? ISI YES INO NO N	□ NO
It is the applicant (individual or company) a U.S. national or U.S. based company. If no, give name of country U. is the applicant the original owner? If original fights to variety were owned by individual(s), listers the original Country If original fights to Warlety were owned by individual(s), listers the original fights to Warlety were owned by individual(s), listers the original fights to Warlety were owned by individual(s), listers the original fights to warlety were owned by individual(s).	y? ISI YES INO NO N	□ NO
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1. Is the applicant (individual or company) a U.S. national or U.S. based company in the polymen and of country. If no, give name of country. If no give name or original covere? YES NO If no, give name of country YES NO If no, give name of country b. If original rights to variety were covered by a company(les), is(any) to a CO YES NO If no, give name of country WES NO If no, give name of country	y? ISI YES INO NO N	□ NO
10. Is the applicant the original counse? 2 YES NO if no, p a. If original rights to variety were connect by individual(s), listers) the original rights to variety were connect by a company(les), listers) the original rights to variety were connect by a company(les), listers) the c 2 YES NO if no, give name of country 1. Additional explanation on commantly (if needed, use reverse for extra space):	y? ISI YES INO NO N	□ NO
B. Is the applicant (individual or company) a U.S. national or U.S. based company in U.S. national or U.S. based company in U.S. national or U.S. based company in U.S. be applicant the original conner? BYES NO If no, give name of country individual(s), isigne) the original rights to variety were conned by individual(s), isigne) the original rights to variety were conned by a company(ins), isigne) the O.B. If original rights to variety were conned by a company(ins), isigne) the O.B. If original rights to variety were conned by a company(ins), isigne) the O.B. If original rights to variety were conned by a company(ins), isigne) the O.B. If original rights to variety were conned by a company(ins), isigne) that O.B. If original rights in the original	y? ISI YES INO NO N	□ NO

Plant variety protection can be afforded only to owners (not ficensees) who meet one of the following criteria:

- W. a

- If the rights to the variety are owned by the original breeder, that person must be a U.S. mitional, national of a UPOV member country, or national of a country Which affords similar protection to nationals of the U.S. for the same genus and species.
- 2. If the riginar to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member occurry, or owned by national of a commry which affords similar protection to nationals of the U.S. for the same greats and species.
- 3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.
- The original breeder/owner may be the individual or company who directed final breeding. See section 41(4)(2) of the Plant Variety Protection Act for definition.

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